

MC-C-7393, Scott Truck Line, Inc.—Investigation and Revocation of Certificates, now assigned September 30, 1976 at Denver, Colorado; will be held in Room 158 U.S. Customs House, 721 19th Street.

MC 140024 (Sub-No. 62), J. B. Montgomery, Inc., now assigned October 4, 1976 at Denver, Colorado; will be held in Room 158 U.S. Customs House, 721 19th Street.

MC 140829 (Sub-No. 6), Cargo Contract Carrier Corp., now assigned October 6, 1976 at Denver, Colorado; will be held in Room 158 U.S. Customs House, 721 19th Street and on October 8, 1976 will be held in Court Room 4, Bankruptcy Court, U.S. Court House, 1929 Stout Street.

MC-C-8830, Browning Freight Lines, Inc., et al. V. Warberg Brothers Company, et al., MC-P-12484, IML Freight, Inc.—Purchase (Portion)—Delbert H. Stephens and Ferdinand A. Klein, dba Spokane-St. Maries Auto Freight and Warberg Brothers Company and MC 33641 (Sub-No. 119), IML Freight, Inc., now assigned September 13, 1976, at Salt Lake City, Utah, will be held in Room 4220, Federal Building, 125 South State Street instead of Room 1423.

ROBERT L. OSWALD,
Secretary.

[FR Doc.76-23892 Filed 8-13-76; 8:45 am]

FOURTH SECTION APPLICATIONS FOR RELIEF

AUGUST 11, 1976.

An application, as summarized below, has been filed requesting relief from the requirements of section 4 of the Interstate Commerce Act to permit common carriers named or described in the application to maintain higher rates and charges at intermediate points than those sought to be established at more distant points.

Protests to the granting of an application must be prepared in accordance with Rule 40 of the General Rules of Practice (49 CFR 1100.40) and filed on or before August 31, 1976.

FSA No. 43211—*Iron and Steel Articles Between Illinois Central Gulf Stations, Chicago, Illinois, and Kansas City, Missouri-Kansas and Points Grouped Therewith.* Filed by Illinois Central Gulf Railroad Company, (No. 76-2). Rates on iron and steel articles, in carloads, as described in the application, between Chicago, Illinois and points grouped therewith, and Kansas City, Missouri-Kansas and points grouped therewith.

Grounds for relief—Carrier competition.

Tariff—Supplement 1 to Illinois Central Gulf Railroad Company tariff 835, I.C.C. No. 52. Rates are published to become effective on September 17, 1976.

FSA No. 43212—*Liquefied Petroleum Gas to Brampton, Ontario, Canada.* Filed by Southwestern Freight Bureau, Agent, (No. B-616), for interested rail carriers. Rates on liquefied petroleum gas, in tank-car loads, as described in the application, from points in Arkansas, Kansas, Louisiana, Missouri, New Mexico, Oklahoma, and Texas, to Brampton, Ontario, Canada.

Grounds for relief—Rate relationship.

Tariff—Supplement 75 to Southwestern Freight Bureau, Agent, tariff SW/E-133-K, I.C.C. No. 5106. Rates are pub-

lished to become effective on September 18, 1976.

FSA No. 43213—*Barley, Oats, Wheat and Wheat Products from Points in Montana and North Dakota on the Soo Line Railroad Company.* Filed by Trans-Continental Freight Bureau, Agent No. 507, for interested rail carriers. Rates on barley, oats, wheat and wheat products, in carloads, as described in the application, from specified points in Montana and North Dakota on the Soo Line Railroad Company, to points in California, Idaho, Montana, Oregon, and Washington, also Alberta and British Columbia, Canada, on the BN, MILW, and UP RR, on domestic and export traffic.

Grounds for relief—Market competition.

By the Commission.

ROBERT L. OSWALD,
Secretary.

[FR Doc.76-23893 Filed 8-13-76; 8:45 am]

[Notice No. 103]

MOTOR CARRIER TEMPORARY AUTHORITY APPLICATIONS

AUGUST 11, 1976.

The following are notices of filing of applications for temporary authority under Section 210a(a) of the Interstate Commerce Act provided for under the provisions of 49 C.F.R. 1131.3. These rules provide that an original and six (6) copies of protests to an application may be filed with the field official named in the FEDERAL REGISTER publication no later than the 15th calendar day after the date the notice of the filing of the application is published in the FEDERAL REGISTER. One copy of the protest must be served on the applicant, or its authorized representative, if any, and the protestant must certify that such service has been made. The protest must identify the operating authority upon which it is predicated, specifying the "MC" docket and "Sub" number and quoting the particular portion of authority upon which it relies. Also, the protestant shall specify the service it can and will provide and the amount and type of equipment it will make available for use in connection with the service contemplated by the TA application. The weight accorded a protest shall be governed by the completeness and pertinence of the protestant's information.

Except as otherwise specifically noted, each applicant states that there will be no significant effect on the quality of the human environment resulting from approval of its application.

A copy of the application is on file, and can be examined at the Office of the Secretary, Interstate Commerce Commission, Washington, D.C., and also in the I.C.C. Field Office to which protests are to be transmitted.

MOTOR CARRIERS OF PROPERTY

No. MC 107295 (Sub-No. 822TA) filed August 3, 1976. Applicant: PRE-FAB TRANSIT CO., 100 South Main St., Farmer City, Ill. 61842. Applicant's representative: Duane Zehr (same address as applicant). Authority sought to op-

erate as a common carrier, by motor vehicle, over irregular routes, transporting: Roofing, roofing materials, and siding (except iron or steel and commodities in bulk), from the plantsite and warehouse facilities of Masonite Corporation, Roofing Division, located at Little Rock, Ark., to points in Alabama, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee and Texas, for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Support shipper: Tommy Strickland, Material Control & Traffic Manager, Masonite Corp., Roofing Division, P.O. Box 1300, 2500 E. Roosevelt Road, Little Rock, Ark. 72203. Send protests to: Harold C. Jolliff, District Supervisor, Interstate Commerce Commission, P.O. Box 2418, Springfield, Ill. 62705.

No. MC 111170 (Sub-No. 231TA) filed July 22, 1976. Applicant: WHEELING PIPE LINE, INC., P.O. Box 1718, 2811 N. West Ave., El Dorado, Ark. 71730. Applicant's representative: Tom E. Moore, (same address as applicant). Authority sought to operate as a common carrier, by motor vehicle, over irregular routes, transporting: Vinyl bromide, in bulk, from Ethyl Plant at Magnolia, Ark., to Williamsburg, Va., for 180 days. Supporting shipper: Dow Chemical U.S.A., Eastern Division, P.O. Box 36000, Strongsville, Ohio 44136. Send protests to: William H. Land, Jr., District Supervisor, 3108 Federal Office Bldg., 700 West Capitol, Little Rock, Ark. 72201.

No. MC 112713 (Sub-No. 194TA) filed August 2, 1976. Applicant: YELLOW FREIGHT SYSTEM, INC., P.O. Box 7270, 10900 Roe Ave., Shawnee Mission, Kans. 66207. Applicant's representative: John M. Records (same address as applicant). Authority sought to operate as a common carrier, by motor vehicle, over regular routes, transporting: General commodities (except those of unusual value, Classes A and B explosives, livestock, household goods as defined by the Commission, commodities in bulk and those requiring special equipment), serving the plantsite of the Tennessee Valley Authority near Hartsville, Tenn., as an off-route point in connection with applicant's otherwise authorized regular route operations. Applicant intends to interline with other carriers at various points throughout applicant's system for through movement of shipments to and from off-line points, for 180 days. Supporting shipper: Tennessee Valley Authority, Chattanooga, Tenn. 37401. Send protests to: John V. Barry, District Supervisor, Interstate Commerce Commission, 600 Federal Bldg., 911 Walnut St., Kansas City, Mo. 64106.

No. MC 113106 (Sub-No. 43TA) (Amendment) filed July 20, 1976, published in the FEDERAL REGISTER issue of July 30, 1976, and republished as amended this issue. Applicant: THE BLUE DIAMOND COMPANY, 4401 E. Fairmont Ave., Baltimore, Md. 21224. Applicant's representative: Chester A. Zyblut, 1030 15th St., NW., Washington,

D.C. 20005. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Paper and paper products*, from the plantsite of Union Camp, at Franklin, Va., to points in Maryland, New York (except New York, N.Y., and its commercial zone, and points in Nassau and Suffolk Counties, N.Y.), Pennsylvania and the District of Columbia, for 180 days. Supporting shipper: Wade P. Wagner, Senior Traffic Spec., Union Camp Corporation, 1699 Valley Road, Wayne, N.J. 07470. Send protests to: William L. Hughes, District Supervisor, Interstate Commerce Commission, 814-B Federal Bldg., Baltimore, Md. 21201. The purpose of this republication is to amend the territorial description in this proceeding.

No. MC 114290 (Sub-No. 81TA), filed August 2, 1976. Applicant: EXLEY EXPRESS, INC., 210 S.E. 8th Ave., Portland, Ore. 97202. Applicant's representative: James T. Johnson, 1610 IBM Bldg., Seattle, Wash. 98101. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Fruit juices and fruit flavored drinks*, in paper cartons, from Anaheim, Calif., to points in Oregon and Washington, for 180 days. Supporting shipper: The Coca Cola Company, P.O. Box 2079, Houston, Tex. 77001. Send protests to: W. J. Huetig, District Supervisor, Bureau of Operations, Interstate Commerce Commission, 114 Pioneer Courthouse, Portland, Ore. 97204.

No. MC 115331 (Sub-No. 415TA) filed August 3, 1976. Applicant: TRUCK TRANSPORT INCORPORATED, 29 Clayton Hills Lane, St. Louis, Mo. 63131. Applicant's representative: J. R. Ferris, 230 St. Clair Ave., East St. Louis, Ill. 62201. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Granular clay*, in bulk, in tank vehicles, from Oran, Mo., to Charles City, Iowa, for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Supporting shipper: Lowe's, Inc., N. Edward St., Cassopolis, Mich. 49031. Send protests to: J. P. Werthmann, District Supervisor, Bureau of Operations, Interstate Commerce Commission, Room 1465, 210 N. 12th St., St. Louis, Mo. 63101.

No. MC 116300 (Sub-No. 26TA) filed August 2, 1976. Applicant: NANCE AND COLLUMS, INC., P.O. Drawer J, Fernwood, Miss. 39635. Applicant's representative: Harold D. Miller, Jr., P.O. Box 22567, Jackson, Miss. 39205. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Liquid bleach and fabric finish* (except in bulk), from Marion, Ala., to Lafayette and New Orleans, La., and Canton, Jackson and Natchez, Miss., for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Supporting shipper: Ames Packaging Corporation, Box 670, South Washington St., Marion, Ala. 36756. Send protests to: Alan C. Tarrant, District Supervisor, Interstate Commerce

Commission, Room 212, 145 East Amite Bldg., Jackson, Miss. 39201.

No. MC 118142 (Sub-No. 129TA), filed August 4, 1976. Applicant: M. BRUENGER & CO., INC., 6250 North Broadway, Wichita, Kansas. 67219. Applicant's representative: Lester C. Arvin, 814 Century Plaza Bldg., Wichita, Kans. 67202. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Prepared frozen food and dehydrated potatoes*, from the plantsite of Inland Storage Distribution, Kansas City, Kans., to Mobile and Florence, Ala.; Helena, Ark.; Atlanta, Decatur, Columbus, Macon, Augusta, and Tifton, Ga.; Indianapolis, Richmond and South Bend, Ind.; Lexington and Owensboro, Ky.; Landover, Hagerstown, Frederick, and Silver Spring, Md.; Atlantic City, Wildwood, Elmer, Beach Haven, Seacaucus, Edison, McCutcheon and Jersey City, N.J.; Avon, Buffalo, New York City and Jericho, N.Y.; Charlotte, Kinston, Mount Airy, Rocky Mount, Greenville, Warsaw and Durham, N.C.; Cincinnati, Akron, Columbus, Lodi, Portsmouth, Jackson, Springfield and Mansfield, Ohio; Philadelphia, Scranton, Pittsburgh, Reading, Stroudsburg, Wilkes-Barre, Swoyersville, Northumberland, Williamsport, and Chaddsford, Pa.; Columbia and Florence, S.C.; Paris, Nashville, Goodlettsville, Chattanooga, Cookeville and Memphis, Tenn.; Norfolk, Portsmouth, and Virginia Beach, Va.; Parkersburg and Daniel, W. Va., for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Supporting shipper: Inland Storage Distribution, P.O. Box 2249, Kansas City, Kans. 64110. Send protests to: M. E. Taylor, District Supervisor, Interstate Commerce Commission, 501 Petroleum Bldg., Wichita, Kans. 67202.

No. MC 121664 (Sub-No. 14TA) filed August 3, 1976. Applicant: HORNADY BROTHERS TRUCK LINE, P.O. Box 846, Monroeville, Ala. 36460. Applicant's representative: Gerald D. Colvin, Jr., 603 Frank Nelson Bldg., Birmingham, Ala. 35203. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Cement, lime and mortar mix*, from the facilities of National Cement Company, Inc., at or near Ragland, Ala., and the facilities of Martin Marietta Cement, Southern Division, at or near Roberta, Ala., to points in Florida, Georgia, Mississippi, Louisiana, Tennessee, North Carolina and South Carolina, for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Supporting shipper: National Cement Co., Inc., 110 Office Park Drive, P.O. Box 7348, Mountain Brook Station, Birmingham, Ala. 35223. Send protests to: Clifford W. White, District Supervisor, Interstate Commerce Commission, Bureau of Operations, Room 1616, 2121 Bldg., Birmingham, Ala. 35203.

No. MC 129032 (Sub-No. 24TA), filed August 2, 1976. Applicant: TOM INMAN TRUCKING, INC., 6015 S. 40th West

Ave., Tulsa, Okla. 74107. Applicant's representative: Martin J. Rosen, 256 Montgomery St., 5th Floor, San Francisco, Calif. 94104. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Glass containers*, from the plantsite and storage facilities of Midland Glass Co., Inc., located at or near Henryetta, Okla., to points in Arkansas, Colorado, Iowa, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, Tennessee, and Texas, for 180 days. Supporting shipper: Midland Glass Co., Inc., P.O. Box 557, Cliffwood, N.J. 07721. Send protests to: Joe Green, District Supervisor, Room 240, Old Post Office Bldg., 215 Northwest Third St., Oklahoma City, Okla. 73102.

No. MC 138954 (Sub-No. 5TA), filed August 3, 1976. Applicant: G. L. CREECH, doing business as TRUCK SERVICE HAULING AND RENTAL, P.O. Box 15891, 1748 Sherwood Forest Blvd., Baton Rouge, La. 70185. Applicant's representative: James B. Thompson, III, 666 South Foster Drive, Baton Rouge, La. 70806. Authority sought to operate as a *contract carrier*, by motor vehicle, over irregular routes, transporting: *Steel reinforcing rods*, from Baton Rouge, La., to construction sites or storage sites in Mississippi, Alabama and that part of Florida west of U.S. Highway 231, under a continuing contract with Armo Steel Corporation, for 180 days. Supporting shipper: Armo Steel Corporation, 24 N. Main St., Middletown, Ohio 45043. Send protests to: Ray C. Armstrong, Jr., District Supervisor, 701 Loyola Ave., 9038 Federal Bldg., New Orleans, La. 70113.

No. MC 141033 (Sub-No. 14TA), filed July 28, 1976. Applicant: CONTINENTAL CONTRACT CARRIER CORP., 15045 E. Salt Lake Ave., P.O. Box 1257, City of Industry, Calif. 91749. Applicant's representative: James I. Mendenhall (same address as applicant). Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: *Materials, equipment and supplies* utilized in the installation of floor coverings and floors; floor mats and runners; adhesives; cove base; carpet binding accessories; maintenance equipment and products; and materials, equipment and supplies utilized in the manufacture, sale and distribution of the commodities described above, from Piqua, Ohio and Klamazoo, Mich., to (1) points in the United States in and east of the states of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas (except Ohio); and (2) City of Industry, Calif., and Vancouver, Wash., restricted against the transportation of commodities in bulk and those which by reason of size or weight, require the use of special equipment and further restricted to the transportation of traffic originating at the plantsites of Roberts Consolidated Industries, Inc., for 180 days. Supporting shipper: Roberts Consolidated Industries, 600 North Baldwin Park Blvd., City of Industry, Calif. 91749. Send protests to: Mary A. Francy, Transportation Assistant, Interstate Commerce Commis-

sion, Bureau of Operations, Room 1321 Federal Bldg., 300 North Los Angeles St., Los Angeles, Calif. 90012.

No. MC 142006 (Sub-No. 1TA), filed August 3, 1976. Applicant: LYNBROOK SALVAGE CORP., 170 Mapes Ave., Newark, N.J. 07112. Applicant's representative: Robert B. Pepper, 168 Woodbridge Ave., Highland Park, N.J. 08904. Authority sought to operate as a *contract carrier*, by motor vehicle, over irregular routes, transporting: (1) *Corrugated roofing, and siding*, from Jersey City, N.J., to points in Connecticut, Delaware, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C., and (2) *materials and supplies* used in the manufacturing of roofing and siding (except in bulk and tank vehicles), from the above destination states, to Jersey City, N.J., under a continuing contract with Corrugated Metals, Inc., Jersey City, N.J., for 180 days. Supporting shipper: Corrugated Metals, Inc., 94 First St., Box 465, Jersey City, N.J. 07303. Send protests to: Robert S. H. Vance, District Supervisor, Interstate Commerce Commission, 9 Clinton St., Newark, N.J. 07102.

No. MC 142254 (Sub-No. 1TA), filed August 3, 1976. Applicant: FRIEDL FUEL & CARTAGE, INC., 417 West Whitewater St., Whitewater, Wis. 53190. Applicant's representative: Michael J. Wyngaard, 329 West Wilson St., Madison, Wis. 53703. Authority sought to operate as a *common carrier*, by motor vehicle, over irregular routes, transporting: (1) *Castings, foundry products and fasteners*, from Palmyra and Whitewater, Wis., to points in Iowa (on and east of U.S. Highway 169), Illinois (on and north of U.S. Highway 36 from the Illinois-Missouri border to the Illinois-Indiana border), and Anoka, Chisago, Ramsey, Washington, Hennepin, Dakota, Goodhue, and Wabasha Counties, Minn.; and (2) *Materials, equipment and supplies* used or useful in the manufacture, sale, installa-

tion or distribution of the commodities named in part (1) above, from points in Iowa (on and east of U.S. Highway 169), Illinois (on and north of U.S. Highway 36 from the Illinois-Missouri border to the Illinois-Indiana border), and Anoka, Chisago, Ramsey, Washington, Hennepin, Dakota, Goodhue, and Wabasha Counties, Minn., to Palmyra and Whitewater, Wis., for 180 days. Supporting shipper: Alpha-Cast, Inc., 520 North Jefferson St., Whitewater, Wis. 53190. Send protests to: Gail Daugherty, Transportation Assistant, Interstate Commerce Commission, Bureau of Operations, 135 West Wells St., Room 807, Milwaukee, Wis. 53203.

No. MC 142303TA (Correction), filed July 23, 1976, published in the FEDERAL REGISTER issue of August 6, 1976, as MC 139568 (Sub-No. 1TA), and republished as corrected this issue. Applicant: CUTLER & LEE, INC., Route 73 & Regent Ave., Maple Shade, N.J. 08052. Applicant's representative: George A. Olsen, 69 Tonnele Ave., Jersey City, N.J. 07306. Authority sought to operate as a *contract carrier*, by motor vehicle, over irregular routes, transporting: *Vehicles*, for salvage, from points in New York, Connecticut, Pennsylvania, Delaware and Maryland, to South Plainfield, N.J., under a continuing contract with Fireman's Fund Customer Service Center, for 180 days. Applicant has also filed an underlying ETA seeking up to 90 days of operating authority. Supporting shipper: Fireman's Fund Customer Service Center, 3333 California St., San Francisco, Calif. 94119. Send protests to: Dieter H. Harper, District Supervisor, Interstate Commerce Commission, 428 East State St., Room 204, Trenton, N.J. 08608. The purpose of this republication is to change docket No. MC 142303TA in lieu of MC 139568 (Sub-No. 1TA).

By the Commission.

ROBERT L. OSWALD,
Secretary.

[FR Doc.76-23894 Filed 8-13-76;8:45 am]

[Section 5b Application No. 2]

WESTERN RAILROAD TRAFFIC ASSOCIATION Agreement

AUGUST 4, 1976.

The Commission is in receipt of the above-entitled and numbered application for approval of an agreement under the provisions of Section 5b of the Interstate Commerce Act.

Filed May 28, 1976 by:

J. M. Souby, Western Railroad Traffic Association, Suite 1200, 222 S. Riverside Plaza, Chicago, IL 60606. (Attorney-in-Fact).
J. D. Feeney and R. T. Opal, Suite 1200, 222 S. Riverside Plaza, Chicago, IL 60606. (Counsel for Applicants).

Agreement involves: Organization, practices, and procedures between and among rail common carrier members of the Western Railroad Traffic Association for the joint consideration, initiation, or establishment of rates, classifications, divisions, allowances, charges, and rules, regulations and practices pertaining thereto, applicable to the transportation of property, in interstate or foreign commerce, from, to, and between points in western territory.

The complete application may be inspected at the Office of the Commission in Washington, D.C.

Any interested person desiring to protest and participate in this proceeding shall notify the Commission in writing on or before September 15, 1976. As provided by the General Rules of Practice of the Commission, persons other than applicants should fully disclose their interest and the position they intend to take with respect to the application. Otherwise, the Commission, in its discretion, may proceed to investigate and determine the matters involved in such application, without further or formal hearing.

ROBERT L. OSWALD,
Secretary.

[FR Doc.76-23895 Filed 8-13-76;8:45 am]

federal register

MONDAY, AUGUST 16, 1976



PART II:

ENVIRONMENTAL PROTECTION AGENCY



CONTROL OF AIR POLLUTION FROM AIRCRAFT AND AIRCRAFT ENGINES

Supersonic Aircraft

Title 40—Protection of the Environment

CHAPTER 1—ENVIRONMENTAL
PROTECTION AGENCY

[FRL 595-2]

PART 87—CONTROL OF AIR POLLUTION
FROM AIRCRAFT AND AIRCRAFT ENGINES

Supersonic Aircraft

Section 231 of the Clean Air Act, as amended by Pub. L. 91-604, directs the Administrator of the Environmental Protection Agency to establish "standards applicable to emissions of any air pollutant from any class or classes of aircraft or aircraft engines which in his judgment cause or contribute to or are likely to cause or contribute to air pollution which endangers the public health or welfare." Regulations ensuring compliance with these standards are required to be issued by the Secretary of Transportation in accordance with section 232 of the Act.

Standards were promulgated on July 17, 1973 (38 FR 19088) which specified limits on emissions from classes of new and in-use subsonic aircraft engines. In addition, the preamble to those regulations stated: "A separate class has been established for engines which power supersonic aircraft. Exhaust emission standards for this class will be based on the best available combustor design technology expected in 1979 and later, but with due consideration for the inherently higher emission characteristics of supersonic aircraft engines under landing/takeoff cycle conditions. These standards will represent the same level of emissions reduction from current supersonic aircraft, through application of the same types of combustor design technology as will be required of subsonic aircraft, though the absolute hydrocarbon and carbon monoxide levels will be several times higher."

On July 22, 1974, a notice of proposed rule making was published in the FEDERAL REGISTER (39 FR 26653) which described standards limiting emissions from supersonic aircraft engines. The NPRM proposed a range of standards applicable to newly manufactured engines effective January 1, 1979. This range of values reflected differences in estimates of technical feasibility among the government engineers who had reviewed advanced drafts of these regulations. The preamble to the NPRM went on to state: "The level of the standards to be ultimately adopted may be more or less stringent than the range of values proposed, depending on data presented by interested parties during the public comment period and at the public hearing on these proposals."

The final standards established herein fall within or above the range proposed for each pollutant and are levels which one of the manufacturers of the engines which power the Concorde, Rolls Royce Ltd., has testified could be met. The other manufacturer, SNECMA, testified that comparable emissions levels were achievable (allowing for differences in

measurement methodology) but that additional time should be permitted before compliance. Accordingly, the implementation date for the standards applicable to newly manufactured engines has been shifted from January 1, 1979, as proposed, to January 1, 1980. These standards are believed to be the most stringent that can be imposed by that date. They reflect the emission control technology currently under development and expected to be available to the SST engine manufacturers. The standards established here for newly certified SST engines reflect the best technology expected for subsonic engines, which is transferable to the T5 class. With regard to the oxides of nitrogen standard for newly certified engines, careful evaluation has led EPA to the conclusion that such a level is attainable without reliance upon water injection. Due to the time required to incorporate the necessary technology into T5 class engines, the date of implementation for the standards applicable to newly certified engines has been postponed to January 1, 1984.

A report, "Alternative Derivations of the Standards for T5 (Supersonic Transport) Class Gas Turbine Aircraft Engines," AC-76-01, which describes the derivation of the standards promulgated, is available for inspection and copying at the EPA Public Information Reference Unit.

The basic justification for emissions standards applicable to aircraft was stated in the preamble to the standards promulgated on July 17, 1973, (38 FR 19088) as follows:

In judging the need for the regulations, the Administrator has determined (1) that the public health and welfare is endangered in several air quality control regions by violation of one or more of the national ambient air quality standards for carbon monoxide, hydrocarbons, nitrogen oxides, and photochemical oxidants, and that the public welfare is likely to be endangered by smoke emissions; (2) that airports and aircraft are now, or are projected to be, significant sources of emissions of carbon monoxide, hydrocarbons, and nitrogen oxides in some of the air quality control regions in which the national ambient air quality standards are being violated, as well as being significant sources of smoke; and therefore (3) that maintenance of the national ambient air quality standards and reduced im-

pact of smoke emissions requires that aircraft and aircraft engines be subject to a program of control compatible with their significance as pollution sources. Accordingly, the Administrator has determined that emissions from aircraft and aircraft engines should be reduced to the extent practicable with present and developing technology.

Therefore, the environmental benefits of this amendment to the basic standards will be to contribute to the maintenance of air quality in and around the major air terminals for international routes which could be served by SST aircraft. Currently, the John F. Kennedy Airport in New York has the most international operations among major United States air terminals. The projected SST operations at JFK in 1990 (assuming that unrestricted use of SSTs is eventually permitted) are approximately 50 landing/takeoff cycles per day, based on an estimated total SST population of 150 (this can be compared to a total of approximately 800 landing/take-off cycles per day for all aircraft). Of these 150 SSTs, it is assumed that 40 would be unregulated, 70 would be subject to the 1980 standards, and 40 would be subject to the 1984 standards. The estimated emissions reductions attributable to the standards applicable to both subsonic and SST aircraft are shown in Table I. The analysis by which this estimate was made is reported in "SST Emissions Projection," AC-76-03, which is available at the EPA Public Information Reference Unit.

EPA projects that the technology capable of reducing emissions from current supersonic (SST) power plants will be essentially the same as that developed for subsonic power plants. Therefore, the research already in progress by engine builders and directed primarily at subsonic aircraft will form the major basis for achieving the standards promulgated herein, supplemented by more advanced research supported by government agencies such as the NASA, U.S. Air Force, and the British National Gas Turbine Establishment. It follows that much of the technology development costs applicable for meeting these standards is already absorbed in the costs estimated for meeting the standards applicable to subsonic aircraft.

TABLE I.—Emissions impact of supersonic transport aircraft at John F. Kennedy Airport in 1990

	[Tons per year]		
	HC	CO	NOx
Uncontrolled subsonic aircraft emissions	3,300	7,950	3,200
Uncontrolled supersonic aircraft emissions	2,100	7,850	1,050
Total uncontrolled aircraft emissions	5,400	15,800	4,250
Reduction in aircraft emissions due to standards for subsonic aircraft only	1,900	3,700	950
Percent reduction from uncontrolled fleet	35	23	22
Reduction in aircraft emissions due to standards for supersonic aircraft only	1,300	3,950	150
Percent reduction from uncontrolled fleet	24	25	4
Reduction in aircraft emissions due to standards for both subsonic and supersonic aircraft	3,200	7,650	1,100
Percent reduction from uncontrolled fleet	59	48	26

NOTE.—(1) Estimate: 150 SST aircraft in world fleet; 50 LTO's per day at JFK; (2) JFK taxi-in and taxi-out modes are 9 minutes and 20 minutes respectively.

EPA estimates that the most probable development cost is \$10 million which represents an increase of \$143,000 per aircraft or 0.36% of the purchase price for a fleet of 70 regulated current technology SST aircraft. EPA estimates that the most probable operational cost penalty is \$5 per hour per aircraft due to increased maintenance, a 0.3% increase in the maintenance and depreciation cost. The extreme estimates for the development cost are (1) worst case—\$80 million, and (2) best case—\$8 million. The extreme estimates for the operational costs are (1) worst case—\$24 per hour and \$15 per hour for fuel and maintenance respectively, (2) best case—no penalty for either fuel or maintenance. The large disparity between the most optimistic and most pessimistic analysis, especially with regard to the development costs, results largely from the absence of substantive information from the manufacturers on this matter.

As required by section 231 of the Act, the Administrator held public hearings with respect to the proposed aircraft emission standards. One was held in Boston, Massachusetts, on November 14, 1974, and another in Los Angeles, California on November 26, 1974. Testimony was presented at these hearings by eleven organizations, including domestic and foreign manufacturers of aircraft and aircraft engines, Governmental groups, environmental groups and universities. Additional detailed comments were provided prior to the hearings by fourteen organizations. A detailed analysis of this information has been made and is available for inspection and copying at the EPA Public Information Reference Unit.

Several commenters stated that standards applicable to SST Aircraft should be set by the International Civil Aviation Organization (ICAO) and not by EPA because of the international character of SST flight operations. EPA intends to cooperate fully with the ICAO in the development of international standards for control of emissions from all classes of aircraft. Nevertheless, in order to fulfill EPA's responsibility under the Clean Air Act, it is necessary to minimize emissions from aircraft of both United States and foreign registry. Moreover, to exempt foreign aircraft would be unfair to domestic air carriers. Therefore, these standards will apply to aircraft of foreign registry until such time as the ICAO has promulgated regulations of at least equivalent stringency. At that time consideration can be given to applicability of ICAO standards to aircraft of foreign registry while the EPA standards would continue to apply to aircraft of United States registry.

Representatives of environmental groups and state and local governments commented that SST aircraft should be required to meet the same standards as are applicable to subsonic aircraft. However, the Clean Air Act authority relating to aircraft emission standards introduces the term "class or classes of aircraft or aircraft engines" in section 231(a)(2). Later it is stated in section 231(b) that "any regulation prescribed under this

section (and any revision thereof) shall take effect after such period as the Administrator finds necessary (after consultation with the Secretary of Transportation) to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." Accordingly, EPA has determined that SST aircraft constitute a discrete class of aircraft under the terms of the Clean Air Act and that the standards to be promulgated should be achievable by this class using reasonably available technology and at reasonable cost. Engines powering SST aircraft are required to incorporate design features which are necessitated by supersonic flight, but which are detrimental to the achievement of emissions as low as those from subsonic aircraft during ground operations and low speed flight in the vicinity of metropolitan airports. Unfortunately, these features are important to achievement of good fuel consumption characteristics during supersonic cruise at high altitudes and therefore cannot readily be compromised. Such features include:

1. Use of afterburners for thrust augmentation at takeoff and climb out, to overcome the inherently poor aerodynamic characteristics of the aircraft during subsonic flight.

2. Limitation to relatively low pressure ratios so as to avoid excessive compressor discharge temperatures during supersonic flight.

3. Use of pure turbojets or very low bypass ratio turbofan operating cycles so as to provide adequate thrust and fuel efficiency and to avoid the excessive weight and aerodynamic drag which would be caused by large diameter high bypass ratio engines, of the type which produce superior fuel consumption characteristics at subsonic flight speeds.

Because of these considerations, SST aircraft meeting the standards promulgated herein will still emit approximately four times more pollutants than will comparable subsonic aircraft. Compounding this problem is the fact that a sizeable percentage of the SST fleet through 1990 will consist of aircraft produced prior to the 1980 date of effectiveness of the standards (at least 27%). The table below compares the emissions contributions of regulated and unregulated SSTs and commercial subsonic aircraft.

Emissions in pounds per aircraft per EPA landing/takeoff (LTO) cycle

	Concorde (SST)	Boeing 747
Unregulated:		
HC.....	195	50
CO.....	800	185
NOx.....	105	125
Regulated:		
HC.....	45	15
CO.....	360	65
NOx.....	110	45

Because of this situation, EPA recognizes the need for this regulation to be supplemented by the implementation of ground operational procedures such as towing the aircraft from the gate to the runway or holding the aircraft at the gate (with propulsion engines off)

until the runway is clear for taxi out and non-delayed takeoff. The implementation of such procedures would further reduce SST aircraft emissions (about 30% to 70% for hydrocarbons, 25% to 55% for carbon monoxide, and 4% to 9% for oxides of nitrogen) and save significant quantities of fuel as well, about 160 to 290 gallons per landing/takeoff cycle. The EPA strongly encourages local airport authorities and airlines to work with the Federal Aviation Administration to implement effective ground operational control programs for SST aircraft as soon as is practicable after the introduction of SST commercial service into the United States. In the absence of such improved procedures, the EPA may have to consider alternative strategies of reducing the SST aircraft emissions, if their numbers grow significantly in later years.

Many comments referred to the potential impact of NOx emissions on ozone depletion during very high altitude cruising conditions, going on to suggest that EPA should promulgate standards to protect against this type of problem. EPA recognizes that high altitude flight by supersonic aircraft (and to a lesser extent by subsonic aircraft) may have detrimental effects on the upper atmosphere. The work recently concluded in the Department of Transportation Climatic Impact Assessment Program indicates to EPA that, if stratospheric flights by SST and other aircraft increase significantly, reductions in their emissions of oxides of nitrogen during stratospheric cruising conditions may be necessary. During the public hearings there was a predominance of testimony arguing in favor of controlling emissions in the upper atmosphere. EPA is continuing its investigation of the need and feasibility of controlling cruise emissions and intends to consider additional rule making for such control from both subsonic and supersonic aircraft as necessary to aid in the preservation of the ozone layer. Issuance of the present standards does not preclude a future standard for the emission of oxides of nitrogen at cruise and, in fact, the standards for newly certified engines are expected to reduce the NOx emissions at cruise below that found in the present aircraft. Further, EPA has decided that the newly certified engine standard to limit the oxides of nitrogen emissions should be set so as to preclude the necessity of water injection as a means of compliance. The development of a low NOx "dry" (i.e., with no water injection) combustor for high power departure from the airport should lead to low NOx emissions through the entire power range except, perhaps for idle. Such a combustor should emit low levels of NOx at cruise as well as during departure.

On February 4, 1976, the Secretary of Transportation announced his decision to permit limited scheduled service to the United States of Concorde SST aircraft. In his statement, he indicated that "I shall also request the Secretary of State to initiate discussions through the ICAO and the World Meteorological Organiza-

tion on the development of international stratospheric standards for the SST." The EPA intends to continue its participation in the work of the ICAO and to participate actively in the discussions on the development of international standards applicable to emissions from SST aircraft under high altitude cruising conditions. The EPA believes that in light of the global nature of the impacts from stratospheric flights by SST aircraft, international standards may be most appropriate in this area.

Emission control technology currently under development for newly manufactured engines will not reduce the NOx level at high power departure sufficiently to improve NOx levels at cruise. Thus, the NOx standard for newly manufactured engines, although met by newly manufactured engines after January 1, 1980, will not be significant in controlling NOx emissions at cruise. The necessary technology for further reduction of NOx can not be implemented by the compliance date chosen for newly manufactured engines of existing design. The 1980 newly manufactured engine standards represent a compromise, to obtain at least some control of emissions in the shortest time possible.

Engine manufacturers commented that the standards proposed did not fully allow for the basic differences in operating cycles between SST and subsonic engines, thereby only partly responding to EPA's expressed intentions in the preamble to the proposed standards. Some of the commenters also stated that more time should be allowed for compliance.

These comments have been considered in formulating the standards promulgated herein, which now allow for all necessary technological and cost considerations inherent in modifying the design of the combustion sections of present design SST engines, such as those which power the Concorde aircraft. This is described more completely in Report AC-76-01, referenced earlier and available in the EPA public information reference unit.

The 1984 standards for newly certified engines reflect a basic change from the values proposed in the NPRM. In the preamble to the NPRM, EPA stated, "For 1981, the proposed levels of newly certified engines assume that such engines will be required to achieve noise levels which will dictate engine cycles for which the indicated emissions are entirely feasible. Specifically, afterburning is not expected to be used for thrust augmentation during takeoff for second generation SST powerplants." Commenters uniformly agreed that SST engine/airframe systems possessing the requisite technology to meet the proposed standards (such as variable cycle engines, swing wing aircraft, etc.) could not be employed for the second generation SST aircraft. Without such advances, it becomes very likely that the features characteristic of the first generation will likely be found also in the second, specifically (1) afterburners, (2) moderate pressure ratios, and (3) low bypass ratios. These features will continue to be the cause of airport emissions from SSTs that are higher

than found in advanced subsonic aircraft. The 1984 standards herein adopted reflect this situation. They do, nonetheless, require the same level of technological advance within the combustor as required of newly certified (commercial) subsonic engines. Further stringency in the standards would likely require a compromise in the design features of the engine which would have the effect of increasing the fuel consumption at altitude. Since this would increase the cruise emissions which is contrary to EPA's intent, this additional stringency is rejected.

It is understood that research on very advanced candidate propulsion systems for future generations of SST aircraft include several which would operate at higher pressure ratios during the low altitude portions of their mission than those engine designs upon which these standards are based. While the emissions characteristics of such high pressure ratio SST engines cannot be predicted with certainty at this time, it would be expected that, with given combustor design technology, their nitrogen oxides emissions might be higher and their hydrocarbon and carbon monoxide emissions lower than the levels promulgated herein. The EPA recognizes that in so dynamic a field as aircraft engine development it will be necessary, from time to time, to review existing emission standards for the purpose of determining their impact on the feasibility of utilizing technology that may not have been available when the standards were formulated. As a result of the current NASA work, or other future developments, technology may become available that for fuel consumption or other performance factors is clearly superior but that cannot meet promulgated emission standards. In that case all of the relevant issues will be reconsidered by EPA in the context of all technical and environmental data then available, and a decision made by the Administrator that is appropriate on the basis of the new information.

It is recognized that most SST aircraft engines will utilize afterburners during the takeoff mode of operation, and further, it is recognized that the emissions measurement procedure of Subpart G is not applicable to the afterburning mode of SST engine operation (take-off mode only). Since a uniformly acceptable measuring technique has not been established for afterburning operation, Subpart G has been amended to allow petition to EPA for a variance in the prescribed procedure for such testing.

As required by Section 231 of the Clean Air Act, the effective date of these standards allows for the time necessary to "permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." In this respect EPA's actions regarding SST emissions differ from its actions regarding SST noise. EPA has recommended (41 FR 6270, Feb. 12, 1976) that all SST aircraft comply with the same noise standards as apply to subsonic aircraft,

without consideration of technology and cost of compliance. This recommendation was based upon the requirement of Section 7 of the Noise Control Act that a proposed standard submitted to the FAA by the EPA "provide such control and abatement through the exercise of any of the FAA's regulatory authority (over air commerce or transportation or over aircraft or aircraft operations) as EPA determines is necessary to protect the public health and welfare."

It is intended that the attainment of any standards proposed herein not result in the increased emission of any substance for which a standard is not proposed if such emission could endanger public health or welfare. The Administrator intends to remain informed throughout engine and aircraft development and certification programs to permit him to determine at the earliest possible time if the emission of a substance is likely to endanger the public health or welfare. Therefore, the Administrator may subsequently publish in the FEDERAL REGISTER a list of those substances whose emissions are likely to increase as a result of the installation or incorporation of any system or component, including fuel additives designed to enable an aircraft or aircraft engine to conform to any prescribed standard. In the event such a list of substances is so published, appropriate testing and sampling methods and/or analytical techniques will be proposed under the normal rule making procedures after consultation with the Department of Transportation.

The standards contained in this notice are being promulgated after consultation with the Secretary of Transportation in order to assure appropriate consideration of aircraft safety. However, the Department of Transportation has advised that it is impossible to make conclusive judgments as to the effects of an emission standard on aircraft safety until engines designed to meet that standard have been developed, constructed, and tested. Therefore, there will be continuing consultation on this issue between this Agency and that Department. Should the Secretary of Transportation determine at any point that an emission standard cannot be met within the specified time without creating a safety hazard, appropriate modifications will be made to that standard or to its effective date.

(Sec. 231 of the Clean Air Act, as amended (42 U.S.C. 1857f-9))

Effective date: This amendment takes effect on September 15, 1976.

Dated: August 10, 1976.

RUSSELL E. TRAIN,
Administrator.

Subparts C and G of Part 87 of Title 40 of the Code of Federal Regulations are amended as follows:

Subpart C—Exhaust Emissions (New Aircraft Gas Turbine Engines)

In § 87.21, paragraphs (d) and (e) are revised as follows:

§ 87.21 Standards for exhaust emissions.

(d) Exhaust emissions from each aircraft gas turbine engine of the classes specified below manufactured on or after the dates indicated shall not exceed:

(1) Class T1 (January 1, 1979):	
•	•
(2) Class T2, T3, T4 (January 1, 1979):	
•	•
(3) Class P2 (January 1, 1979):	
•	•
(4) Class T5 (January 1, 1980):	
(i) Hydrocarbons.....	3.9 pounds/1,000 pound-thrust hours/cycle.
(ii) Carbon Monoxide.....	30.1 pounds/1,000 pound-thrust hours/cycle.
(iii) Oxides of nitrogen.....	9.0 pounds/1,000 pound-thrust hours/cycle.
(iv) Smoke.....	Smoke number from Figure 1.

(5) The smoke number for each engine shall be determined by obtaining the smoke number corresponding to the engine rated power from Figure 1 for turbofan or turbojet engines and Figure 2 for turboprop engines.

(e) Exhaust emissions from each newly certified aircraft gas turbine engine of the classes specified below manufactured on or after the dates indicated shall not exceed:

(1) Class T2, T3, or T4 (January 1, 1981):	
(i) Hydrocarbons.....	0.4 pound/1,000 pound-thrust hours/cycle.
(ii) Carbon monoxide.....	3 pounds/1,000 pound-thrust hours/cycle.
(iii) Oxides of nitrogen.....	Do.
(iv) Smoke.....	Smoke number from Figure 1.
(2) Class T5 (January 1, 1984):	
(i) Hydrocarbons.....	1.0 pound/1,000 pound-thrust hours/cycle.
(ii) Carbon monoxide.....	7.8 pounds/1,000 pound-thrust hours/cycle.
(iii) Oxides of nitrogen.....	5.0 pounds/1,000 pound-thrust hours/cycle.
(iv) Smoke.....	Smoke number from Figure 1.

Subpart G—Test Procedures for Engine Exhaust Gaseous Emissions (Aircraft and Aircraft Gas Turbine Engines)

1. In § 87.62, paragraph (a) is revised as follows:

§ 87.62 Test procedure (propulsion engines).

(a)(1) The engine shall be tested in each of the following engine operating modes which simulate aircraft operation to determine its mass emission rates.

Actual power setting, that when corrected to standard day conditions, corresponds to the following percentage of rated power, (rated power includes the reheat contribution and thrust augmentation due to water injection, if applicable):

Mode	Class T1 or P2	Class T2, T3, or T4	Class T5
Taxi/idle (out).....	(1)	(1)	(1)
Takeoff.....	100	100	100
Climbout.....	90	85	65
Descent.....	NA	NA	15
Approach.....	30	30	34
Taxi/idle (in).....	(1)	(1)	(1)

¹ See subpar. (2) of this paragraph.

2. In § 87.64, paragraph (c) (1) (ii) (d) is revised and a new paragraph (c) (3) is added as follows:

§ 87.64 Sampling and analytical system for measuring exhaust emissions.

- (c) * * *
- (1) * * *

(ii) * * *

(d) The axial sampling plane shall be as close to the plane of the exit nozzle as engine performance parameters permit but in any case, shall be within one exit nozzle diameter of the exit plane, except for engine operating modes which employ reheat (afterburning).

(3) Sampling system for use with reheat (afterburning). For engines which employ reheat, a sampling system selected by the manufacturer may be used for tests during afterburner (reheat) operation if shown to yield representative results and if approved in advance by the Administrator.

3. In § 87.70, paragraph (d) is revised as follows:

§ 87.70 Calculations.

(d) The time in mode (TIM) shall be as specified below:

Times in mode (minutes)	Class T1 or P2	Class T2, T3, or T4	Class T5
(1) Taxi/idle (out).....	19.0	19.0	19.0
(2) Takeoff.....	.5	.7	1.2
(3) Climbout.....	2.5	2.2	2.0
(4) Descent.....	NA	NA	1.2
(5) Approach.....	4.5	4.0	2.3
(6) Taxi/idle (in).....	7.0	7.0	7.0

(Sec. 11 (a) (1), Pub. L. 91-604, 84 Stat. 1703 (42 U.S.C. 1857f-9))

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